

Our reference 本署檔號 :
(84) in EMSD/LESD/7-2/4A Pt. II

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21 June 2024

To: All Registered Lift Contractors
All Registered Lift Engineers

Circular No. 6/2024 - Guideline on Provision of Telecommunications Service Coverage to Lifts

Telecommunications services are basic and essential utility in the society nowadays. The Government has been pressing ahead to facilitate expansion of the territory's 5G infrastructure to further strengthen Hong Kong's development as a smart city. To support this notion, a consultation exercise commenced in January 2024 regarding the ways to facilitate the provision of ubiquitous coverage to users within lift cars installed in buildings, in particular, by way of putting up telecommunications devices in areas designated for exclusive use of lifts.

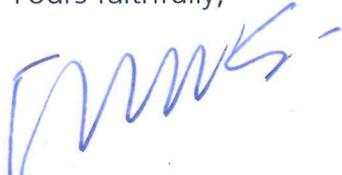
With extensive and constructive views received in the consultation exercise, the considerations and criteria for putting up telecommunications devices to serve lift passengers have been finalized in form of guideline as attached in the **Annex**. The guideline, inter alia, streamlines the administrative requirement for certain system configurations where the design meets specific requirements for safeguarding the lift passengers and workers. For such cases, the registered lift contractor ("RC") shall furnish the required notification by making use of specified form LE3 in compliance with the requirements stated in the guideline.

The arrangements of this circular take immediate effect. RCs are encouraged to liaise with project owners and the relevant telecommunications services providers ("TSPs") early to determine the configuration of telecommunications system that best suits individual needs.

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If you have any questions on the subject matter, please contact our officer on telephone number 3757 6120.

Yours faithfully,



(NG Siu-on, Francis)
for Director of Electrical and Mechanical Services

c.c.

Internal

Office of the Communications Authority (Attn: Head, Regulatory 1)
Buildings Department (Attn: Chief Building Surveyor/Kowloon)

External

The Lift and Escalator Contractors Association
The Registered Elevator and Escalator Contractors Association Limited
The International Association of Elevator Engineer (HK-China) Branch
The Hong Kong Institution of Registered Engineers (Lift & Escalator)
The Hong Kong Association of Property Management Companies
The Hong Kong Institute of Surveyors
Building Services Operation and Maintenance Executives Society
The Real Estate Developers Association of Hong Kong
All Mobile Network Operators

Guideline on Provision of Telecommunications Service Coverage to Lifts

Introduction

Telecommunications services are basic and essential utility in the society nowadays, and a wide telecommunications service coverage with continuous high quality wireless voice and data performance is crucial for the development of a well-connected city.

2. With proper planning and organization, telecommunications devices can be integrated into lift installations, clear of operational impairments or signal interferences, to sustain provision of telecommunications services in the lift car to meet the growing service demand and expectation. The considerations and requirements for putting up and servicing telecommunications devices in areas designated for the exclusive use of lifts¹ are given in the ensuing paragraphs.

Basic Principles

3. The well (lift shaft), machine and pulley rooms of a lift are normally **not** used for purposes other than lifts².

4. If the telecommunications devices have been integrated³ into the lift installation to render such services available during the lift ride, they are considered as part of the lift. The installation and servicing of telecommunications devices forming part of the lift are regarded as **lift**

¹ That is applicable to both new and existing lift installations.

² Clause 5.2.1.2 of Section E Part 1 of the Code of Practice on the Design and Construction of Lifts and Escalators stipulates that the well, machine and pulley rooms of a lift shall not be used for purposes other than lifts. They (the well, machine and pulley rooms) shall not contain ducts, cables or devices other than for the lift. The lift well, machine and pulley rooms may, however, contain: (a) equipment for air-conditioning or heating of these spaces, excluding steam heating and high pressure water heating. All control and adjustment devices of the heating apparatus shall be located outside the well. (b) fire detectors or extinguishers, with a high operating temperature (e.g. above 80° C), appropriate for the electrical equipment and suitably protected against accidental impact. Fire sprinklers, however, shall not normally be fitted in these rooms. (c) power factor correction devices, harmonic correction devices, metering devices or provisions for measurement. Machine rooms may contain machines for other kinds of lifts, e.g. goods only lifts.

³ An example of that is the setting up of telecommunications antenna above the drop ceiling of the lift car.

works⁴ required to be carried out by registered lift contractors⁵ (“RCs”). Given the specialty of telecommunications devices, approval for subcontracting⁶ the installation as well as servicing of the telecommunications devices to telecommunications services provider⁷ (“TSP”), other than an RC, would normally be granted. The installation and servicing of the devices, however, are required to be under the direct supervision of a **qualified person**⁸. RCs are also required to observe the common design and implementation requirements stipulated in paragraphs 8 to 15 of this guidance notes. Such arrangement is illustrated as Case 1 in Appendix I.

5. For telecommunications devices which do not have **physical interface**⁹ with the lift and are installed in areas designated for the lift’s exclusive use, exemption¹⁰ would normally have to be sought for the installation of the devices due to violation of requirement set in paragraph 3 above. Due to the specialty of the environment of the areas designated for lift’s exclusive use, such works, though not being considered as lift works, shall also be under direct supervision of a qualified person for safety reasons. Such arrangement is illustrated as Case 2 in Appendix I.

6. To facilitate the responsible persons¹¹ (“RPs”) to provide ubiquitous wireless access to the passengers during their travels with lift cars, the requirements relating to granting exemptions for installation of telecommunications devices in areas designated for the exclusive use of the lifts are streamlined. Subject to full compliance with the technical requirements given in paragraphs 8 to 23 of this guideline, instead of seeking case-by-case exemption as mentioned in paragraph 5 above, RCs could follow the streamlined arrangement as laid down in paragraphs 24 and 25 of

⁴ **Lift works** (升降機工程) is defined under section 2 of the Lifts and Escalators Ordinance (Cap. 618, “LEO”) to include any kind of work concerning the installation, commissioning, examination, maintenance, repair, alteration or demolition of a lift or any associated equipment or machinery of a lift.

⁵ Contractors registered under the LEO, qualified for undertaking lift works, including installation, maintenance, and examination of lifts.

⁶ RCs would have to make use of statutory form LE2 to apply for subcontracting such works to parties who are not an RC under the LEO. Section 38 of the LEO refers.

⁷ Being mobile network operators and/or internet services providers.

⁸ **Qualified person** (合資格人士) is paraphrased to mean, in relation to any lift works concerning the **commissioning or examination** of a lift or any part of a lift, or any associated equipment or machinery of the lift, a registered lift engineer, or a registered lift worker who is qualified to carry out the works in the capacity or as the agent of the RC undertaking the works; in relation to any **other lift works**, a registered lift engineer or a registered lift worker who is qualified to carry out the works in the capacity or the agent of the RC undertaking the works. See the original definition under section 2 of the LEO.

⁹ Such as in the case where transmission of the signals is made via leaky cables or antennas attached to various portions of the lift well having no physical interface with the lift equipment.

¹⁰ Section 148 of the LEO refers.

¹¹ **Responsible person** (負責人) is defined under section 2 of the LEO, to mean, in relation to a lift, a person who owns the lift; or any other person who has the management or control of the lift.

this guideline to notify the EMSD on the proposed installation.

Technical Requirements

Common Design and Implementation Requirements

7. These common requirements apply to all telecommunications devices to be installed in the vicinity of lift, no matter the telecommunications devices form part of the lift or not.

8. It is necessary to ensure that the telecommunications cables and devices used for carrying and transmitting signals for telecommunications services are compatible with the lift, and the installation and servicing of the telecommunications cables and devices be free of impediments or interferences to the operations and upkeep of the lift.

9. It is of paramount importance that the devices' **electromagnetic compatibility** (“EMC”) with the lift concerned must be confirmed. For cases the telecommunications devices are to be set up for a lift installation, on-site verification or assessment of the electromagnetic compatibility shall be required.

10. Telecommunications devices capable of emitting radio signals, including those within where the lift is located, are required to comply with the EMC requirements specified in the applicable standards under the Hong Kong Telecommunications Equipment Evaluation and Certification Scheme¹².

11. As some of the existing lifts of earlier design may not be compliant with existing EMC standards, further test on the EMC of both telecommunications devices and the associated equipment of the lift is required when telecommunications devices are to be put up to extend the telecommunications service coverage to these lifts.

12. Before commencing any work for having telecommunications service coverage extended to their lifts, RPs are strongly recommended to engage and consult RCs and TSPs for professional advice on both lift safety and telecommunications service performance before choosing the most suitable solution.

¹² For details, please refer to
https://www.ofca.gov.hk/en/industry_focus/standards/tel_standards/telecom/index.html

13. Risk assessment should be conducted and safety measures followed for the installation and servicing of the telecommunications devices within the areas designated for the exclusive use of the lifts.

14. The RC responsible for the maintenance of the lift and the TSP should work together upon completion of the telecommunications service coverage extension, and lift installation as for new lifts, to test the telecommunications service coverage and proper functioning of the lift concerned. The test results should be recorded in the log-book of the lifts.

15. Relevant drawings, risk assessments, certificates, test reports and other supporting documents of the works related to the extension of telecommunications service coverage to the lifts should be incorporated and form part of the operation and maintenance manual of the lifts.

Specific Design Requirements

16. The specific design requirements apply to the putting up of telecommunications devices, which do not form part of the lift but are to be installed in areas designated for the exclusive use by lifts.

17. The telecommunications devices should preferably be placed in their designated services rooms¹³. Telecommunications devices that require frequent regular servicing should **not** be put up in areas designated for the exclusive use by lifts.

18. All telecommunications devices to be installed in lift machine rooms should be small in size and require no external power as far as practicable. Where inevitable, the power supply to the devices should come from a source independent of that of the lift and from outside the lift machine room. The power supply lines should be segregated from those for the lifts.

19. Only passive telecommunications equipment (e.g. antenna and cables) should be installed in the lift well. The enclosure of the equipment shall provide a degree of protection of at least IP53¹⁴ to cope with the harsh environment inside the lift well.

20. No telecommunications devices should be overhung above lift machinery, instruments, or equipment in the machine room. Safety links shall be provided in addition to normal fixings for suspension of overhung

¹³ For instances, meter rooms, telecommunications and broadcasting equipment rooms in the building.

¹⁴ From international standard IEC60529.

telecommunications devices in areas designated for the exclusive use of the lift.

21. Cable trays/trunks for the cables of telecommunications services in areas designated for the exclusive use of the lifts must be provided with clear identification for discernment and run separately from cable trays/trunks for the lifts. All telecommunications devices (cables, terminal boxes, antennas, etc.) put up in areas designated for the exclusive use of the lifts should maintain a clear separation from the lift installation (cable, rails, instruments, equipment, etc.). Consideration should in particular be given to avoid impediments to repair and maintenance, including emergency operation, of the lift machine due to servicing activities of the telecommunications devices in the areas designated for the exclusive use of the lifts.

22. Telecommunications cables put up in the lift well should be neatly and firmly attached to the wall¹⁵, or affixed¹⁶ to or embedded in the travelling cable¹⁷ of the lift. Cables running along the wall of the lift well, including termination boxes and antennas where applicable, must maintain the needed clearance from other lift equipment and the lift car in transit¹⁸.

23. Telecommunications devices (e.g. antenna) to be installed in the lift car should be preferably placed inside and above the drop ceiling. No telecommunications devices are allowed to be installed in the car top area unless they are absolutely necessary for the operations of the telecommunications system.

Streamlining Arrangement

24. As mentioned in paragraph 6 above, for systems meeting the requirements stipulated in paragraphs 16 to 23, instead of seeking exemptions, the RC responsible for the maintenance of the lift shall notify EMSD of the works of extension of telecommunications coverage to lift by making use of specified form LE3.

¹⁵ Such as leaky coaxial cables.

¹⁶ The compatibility or versatility of the telecommunications signal cable to function like a travelling cable should be ascertained.

¹⁷ A flexible cable running together with the lift car to provide electrical power and control signals for the lift car.

¹⁸ Telecommunications devices should not be put up in areas close to running path of the lift, as well as in the vicinity of the guide rail, counterweight path, and doorways.

25. The duly completed specified form LE3 shall be accompanied with (i) schematic diagram(s) of the system design; (ii) simple drawing(s) to show the location of the devices within designated area for lifts; and (iii) maintenance schedule of the telecommunications devices. Whenever there is any change to the TSP or RC, the RC shall notify EMSD with a new LE3 form with the updated information duly highlighted. A sample of the LE3 form is illustrated in Appendix II.

26. For enquiries, please contact General Legislation Division 1 of the Electrical and Mechanical Services Department on telephone no. 3757 6120 or via email lesd@emsd.gov.hk.

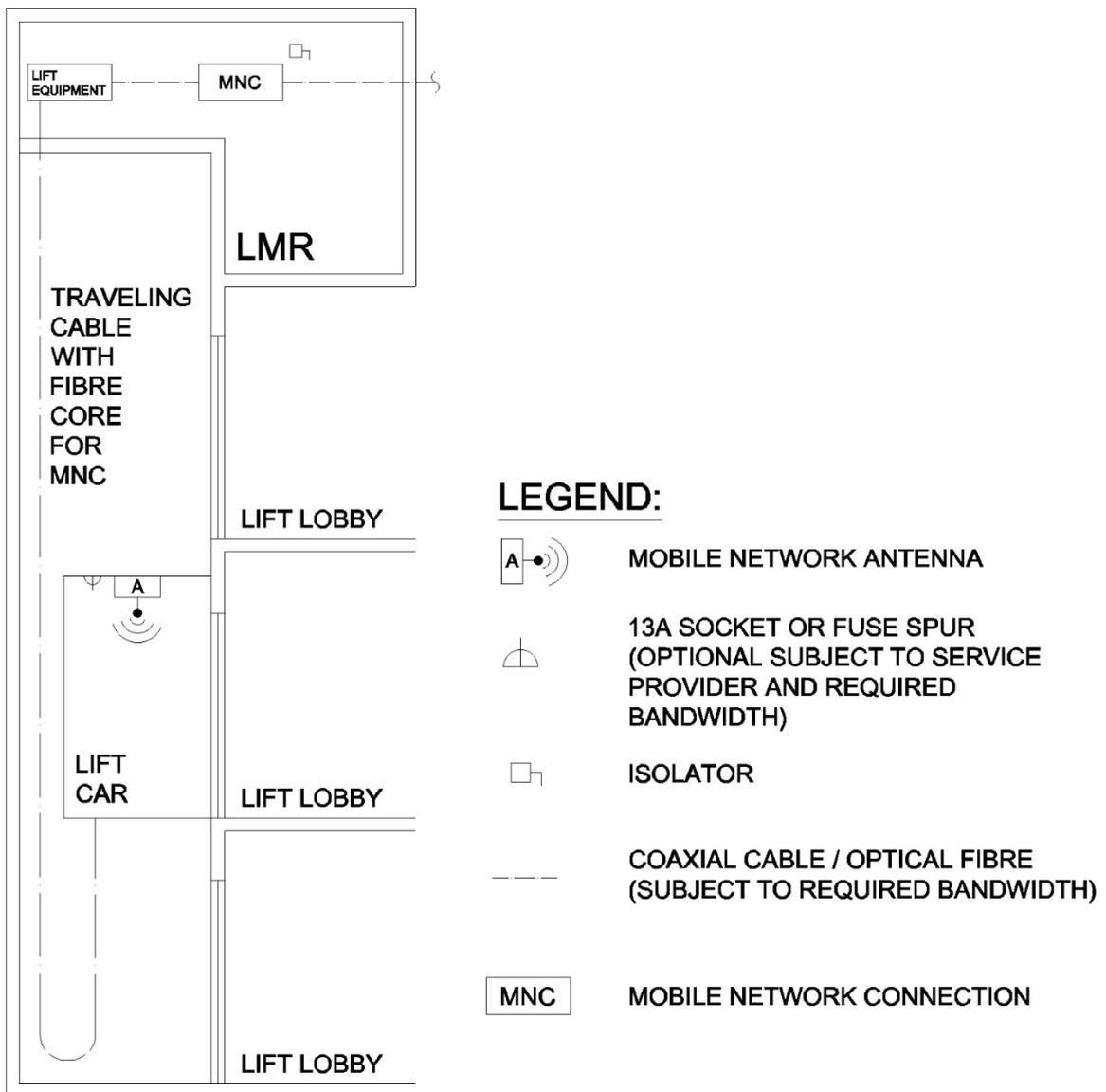
General Legislation Division 1
Electrical and Mechanical Services Department
June 2024

Reference

“Code of Practice for the Protection of Workers and Members of Public against Non-Ionising Radiation Hazards from Radio Transmitting Equipment”
issued by Office of the Communications Authority

Appendix I - Illustration of Commonly Deployed Solutions

Case 1 – Telecommunications system forming “part of the lift”



Case 2 – Telecommunications provisions **not** forming “part of the lift”

